

ATTRIBUTES AND DATA INTEGRITY

An Entity is represented by a set of properties called Attributes. The attributes are useful in describing the properties of each entity in the entity set.

Types of attributes:

1. Simple Attributes: The attributes which cannot be further divided into subparts.

Eg; University Seat Number of a student is unique which cannot be further divided.

2. Composite Attributes : The attributes can be further divided into portions.

Eg: The attribute name in the Student Database can be further divided into First name, Middle name, Last name.

Name

Firstname Middle name Last name

3. Single valued attributes : The attribute at any instant contains only a specific value at any instant.

for eg The USN is unique

4. Multivalued Attributes; Certain attributes for example the dependent name in the policy database may have set of values assigned to it. There may be more than one dependent for a single policy holder.

5. Stored Attributes: For a person entity, the value of age can be determined from the current date and the value of that person's birthdate. The Age attribute is hence derived attribute and is said to be derivable from the birthdate attributes, which is called a stored attributes.

6. NULL Attributes: A NULL value attribute is used when an attributes does not have any values.

Data integrity

Data is accepted based on certain rules & therefore data is valid.

Enforcing data integrity ensures that the data in the database is valid and correct.

Keys play an important role in maintaining data integrity.

The various types of keys that have been identified are :

Candidate key

Primary key

Alternate key

Composite key

Foreign Key

Candidate key

An attribute or set of attributes that uniquely identifies a row is called a Candidate key.

This attribute has values that are unique

Vehicle

Serial#	Regn#	Description
023451	5602	Leyland
023452	4502	Volvo
023453	4513	Toyota

Primary Key

The Candidate key that you choose to identify each row uniquely is called the Primary key.

Alternate Key

A Candidate key that is not chosen as a Primary key is an Alternate key.

Composite Key

In certain tables, a single attribute cannot be used to identify rows uniquely and a combination of two or more attributes is used as a Primary key. Such keys are called Composite keys.

Purchase

Customer Code	Product Code	Qty Purchased	Purchase Date
C122	P002	12	2/15/99
C134	P005	15	2/15/99
C018	P002	10	2/15/99
C122	P003	17	2/16/99

Foreign Key

When a primary key of one table appears as an attribute in another table, it is called the Foreign key in the second table

A foreign key is used to relate two tables.